TRAUMA - ADULT
(15 years of age and older)

Any critical trauma patient (CTP) requires effective communication and rapid transportation to the closest trauma center. If not contacted at scene, the receiving trauma center must be notified as soon as possible in order to activate the trauma team.

In Inyo and Mono Counties, the assigned Base Station should be contacted for determination of appropriate destination.

FIELD ASSESSMENT/TREATMENT INDICATORS

Refer to ICEMA Reference #15030 - Trauma Triage Criteria and Destination Policy.

BLS INTERVENTIONS

- Ensure thorough initial assessment.
- Ensure patent airway, protecting cervical spine.
- Axial spinal stabilization as appropriate.
- Oxygen and/or ventilate as needed, O_2 saturation (if BLS equipped).
- Keep patient warm.
- For a traumatic full arrest, an AED may be utilized, if indicated.
- Transport to ALS intercept or to the closest receiving hospital.

Manage Special Considerations

- **Abdominal Trauma**: Cover eviscerated organs with saline dampened gauze. Do not attempt to replace organs into the abdominal cavity.

- **Amputations**: Control bleeding. Rinse amputated part gently with sterile irrigation saline to remove loose debris/gross contamination. Place amputated part in dry, sterile gauze and in a plastic bag surrounded by ice (if available). Prevent direct contact with ice. Document in the narrative who the amputated part was given to.

  Partial Amputation: Splint in anatomic position and elevate the extremity.

- **Bleeding**:

  - Apply direct pressure and/or pressure dressing.

  - To control life-threatening bleeding of a severely injured extremity, consider application of tourniquet when direct pressure or pressure dressing fails.

- **Chest Trauma**: If a wound is present, cover it with an occlusive dressing. If the patient's ventilations are being assisted, dress wound loosely, (do not seal). Continuously reevaluate patient for the development of tension pneumothorax.

- **Flail Chest**: Stabilize chest, observe for tension pneumothorax. Consider assisted ventilations.

- **Fractures**: Immobilize above and below the injury. Apply splint to injury in position found except:

  - **Femur**: Apply traction splint if indicated.

  - **Grossly angulated long bone with distal neurovascular compromise**: Apply gentle unidirectional traction to improve circulation.

  - **Check and document distal pulse before and after positioning**.

- **Genital Injuries**: Cover genitalia with saline soaked gauze. If necessary, apply direct pressure to control bleeding. Treat amputations the same as extremity amputations.

- **Head and Neck Trauma**: Place brain injured patients in reverse Trendelenburg (elevate the head of the backboard 15-20 degrees), if the patient exhibits no signs of shock.

  - **Eye**: Whenever possible protect an injured eye with a rigid dressing, cup or eye shield. Do not attempt to replace a partially torn globe – stabilize it in place with sterile saline soaked gauze. Cover uninjured eye.

  - **Avulsed Tooth**: Collect teeth, place in moist, sterile saline gauze and place in a plastic bag.

- **Impaled Object**: Immobilize and leave in place. Remove object if it interferes with CPR, or if the object is impaled in the face, cheek or neck and is compromising ventilations.

- **Pregnancy**: Where axial spinal stabilization precaution is indicated, the board should be elevated at least 4 inches on the right side for those patients who have a large pregnant uterus, usually applies to pregnant females $\geq$ 24 weeks of gestation.

- **Traumatic Arrest**: CPR if indicated. May utilize an AED if indicated.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

LIMITED ALS (LALS) INTERVENTIONS

- Advanced airway (as indicated).
  - Unmanageable Airway: Transport to the closest most appropriate receiving hospital when the patient requires advanced airway. An adequate airway cannot be maintained with a BVM device.
- Apply AED.
- IV Access (warm IV fluids when available).
  - *Unstable:* BP<90mmHG and/or signs of inadequate perfusion, start 2nd IV access.
  - *Stable*: BP>90mmHG and/or signs of adequate tissue perfusion.

Blunt Trauma:

- *Unstable*: IV NS open until stable or 2000 ml maximum is infused
- *Stable*: IV NS TKO

Penetrating Trauma:

- *Unstable*: IV NS 500ml bolus one (1) time.
- *Stable*: IV NS TKO

Isolated Closed Head Injury:

- *Unstable:* IV NS 250ml bolus, may repeat to a maximum of 500ml.
- *Stable*: IV NS TKO

- Transport to appropriate hospital.

Manage Special Considerations

- **Fractures**
  - **Isolated Extremity Trauma**: Trauma without multisystem mechanism. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured, e.g., dislocated shoulder, hip fracture or dislocation.
  - Administer IV NS 250 ml bolus one (1) time.

- **Impaled Object**: Remove object upon Trauma Base Station physician order, if indicated.

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Apply AED and follow the voice prompts.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

  - *Severe Blunt Force Trauma Arrest*: If indicated, transport to the closest receiving hospital.

  - *Penetrating Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- If the patient does not meet the "Obvious Death Criteria" in ICEMA Reference #12010 - "Determination of Death on Scene", contact the Trauma Base Station for determination of death on scene for those patients who suffer a traumatic cardiac arrest in the setting of penetrating trauma with documented asystole in at least two (2) leads, and no reported vital signs (palpable pulse and/or spontaneous respirations) during the EMS encounter with the patient.

- Resuscitation efforts on a penetrating traumatic arrest victim are not to be terminated without Trauma Base Station contact.

- **Precautions and Comments**:

  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.

  - Consider cardiac etiology in older patients in cardiac arrest with low probability of mechanism of injury.

  - If the patient is not responsive to trauma-oriented resuscitation, consider medical etiology and treat accordingly.

  - **Unsafe scene may warrant transport despite low potential for survival.**

  - Whenever possible, consider minimal disturbance of a potential crime scene.

- **Base Station Orders**: May order additional fluid boluses.

ALS INTERVENTIONS

- Advanced Airway (as indicated):
  - Unmanageable Airway: If an adequate airway cannot be maintained with a BVM device; **and** the paramedic is unable to intubate or perform a successful needle cricothyrotomy (if indicated), **then**, transport to the closest receiving hospital and follow ICEMA Reference #8100 - Continuation of Trauma Care.
- Monitor ECG.
- IV/IO Access (Warm IV fluids when available).
  - *Unstable:* BP <90mmHG and/or signs of inadequate perfusion, start 2nd IV access.
  - *Stable*: BP >90mmHG and/or signs of adequate tissue perfusion.

  Blunt Trauma:
  - *Unstable*: IV NS open until stable or 2000ml maximum is infused
  - *Stable*: IV NS TKO

  Penetrating Trauma:
  - *Unstable*: IV NS 500ml bolus one time
  - *Stable***:** IV NS TKO

  Isolated Closed Head Injury:
  - *Unstable:* IV NS 250ml bolus, may repeat to a maximum of 500ml
  - *Stable*: IV NS TKO
- Transport to appropriate hospital.
- Insert nasogastric/orogastric tube as indicated.

Manage Special Considerations

- **Chest Trauma**: Perform needle thoracostomy for chest trauma with symptomatic respiratory distress.

- **Fractures**

  - **Isolated Extremity Trauma**: Trauma without multisystem mechanism. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured, e.g., dislocated shoulder, hip fracture or dislocation.

  - **IV Pain Relief**:

    Morphine Sulfate 5 mg IV slowly. May repeat every five (5) minutes to a maximum of 20 mg, if the patient maintains a BP >90mmHG and shows signs of adequate tissue perfusion. Document BPs every five (5) minutes while medicating for pain and reassess patient.

    Consider Ondansetron 4 mg slow IVP/PO as prophylactic treatment of nausea and vomiting associated with narcotic administration.

    Note: Patients in high altitudes should be hydrated with IV NS prior to IV pain relief to reduce the incidents of nausea, vomiting, and transient hypotension, which are side effects associated with administering IV Morphine.

    Administer IV NS 250ml bolus one (1) time.

  - **IM Pain Relief**:

    Morphine Sulfate 10 mg IM. Document vital signs and reassess patient.

    Consider Ondansetron 4 mg IM/PO as prophylactic treatment of nausea and vomiting associated with narcotic administration.

- **Head and Neck Trauma**: Immediately prior to intubation, consider prophylactic Lidocaine 1.5 mg/kg IV for suspected head/brain injury.

- **Base Station Orders**: When considering Nasotracheal intubation ($\geq$15 years of age) and significant facial trauma, trauma to the face or nose and/or possible basilar skull fracture are present, Trauma Base Station contact is required.

- **Impaled Object**: Remove object upon Trauma Base Station physician order, if indicated.

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Treat per ICEMA Reference #11070 - Cardiac Arrest - Adult.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

  - *Severe Blunt Force Trauma Arrest*: If indicated, transport to the closest receiving hospital.
  - *Penetrating Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- If the patient does not meet the "Obvious Death Criteria" in ICEMA Reference #12010 - Determination of Death on Scene, contact the Trauma Base Station for determination of death on scene for those patients who suffer a traumatic cardiac arrest in the setting of penetrating trauma with documented asystole in at least two (2) leads, and no reported vital signs (palpable pulse and/or spontaneous respirations) during the EMS encounter with the patient.

- Resuscitation efforts on a penetrating traumatic arrest victim are not to be terminated without Trauma Base Station contact.

- **Precautions and Comments**:

  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.

  - Consider cardiac etiology in older patients in cardiac arrest with low probability of mechanism of injury.

  - **Unsafe scene may warrant transport despite low potential for survival.**

  - Whenever possible, consider minimal disturbance of a potential crime scene.

- Base Station Orders: May order additional medications and/or fluid boluses.

REFERENCES

Number	**Name**
8100	Continuation of Trauma Care
9010	General Patient Care Guidelines
10010	King Airway Device - Adult
10030	Oral Endotracheal Intubation - Adult
10050	Nasotracheal Intubation
10060	Needle Thoracostomy
10070	Needle Cricothyrotomy
10080	Insertion of Nasogastric/Orogastric Tube
10130	AED - BLS
10140	Intraosseous Infusion IO
10150	External Jugular Vein Access

10160	Axial Spinal Stabilization
11070	Cardiac Arrest - Adult
12010	Determination of Death on Scene
15030	Trauma Triage Criteria and Destination Policy